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CENTRAL INTELLIGENCE AGENCY
INFORMATION REPORT

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1. During 1948 or early 1949, the Soviet Ministry of the River Fleet (Ministerstvo Rechnogo Flota) placed an order with Investa, a Czechoslovak export and import firm in Prague, for the delivery of river passenger ships. All the ships were to be of the same type and were destined for use on Soviet rivers and canals. The Investa firm placed this order with the Skoda Shipyards in Komarno (N 47-46, E 18-08). Stuchlik (fnu) was the Investa official who was in charge of liaison between his firm and the Skoda Shipyards. Stuchlik also may have been the Investa official responsible for the execution of this order. 25X1
2. The first conference for discussing ship production was held in Prague (or in Hradec Kralove) in early 1949. Smok (fnu), a representative of the Ministry of Heavy Machinery Construction, Dr. Ing. Klima (fnu), manager of the MEZ Development in Brno, and Strajbl (fnu), a graduate engineer in machinery construction in charge of the Design Department of the Skoda Works, represented Czechoslovakia. The Soviet representatives were headed by the Deputy Minister of the River Fleet, Ptashnikov (fnu). This was only a general discussion and no technical details were determined. Ptashnikov originally wanted side-wheel-propelled ships with diesel-electric drives, but Klima opposed this idea because of their unnecessary expense and insisted that diesel-electric drives with propellers be used instead.
3. In 1949, the Skoda Shipyards in Komarno entrusted the designing of the ship to the Skoda Ship Design Department located in the Skoda Works in Hradec Kralove.¹ The Skoda Ship Design Department, as such, was liquidated at some time near the end of 1950 and its employees and all activities were transferred to the newly created

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Ship Design Department of the Evika firm in Prague-Smichov, Kartouzaska 200. This newly created Ship Design Department served both the Skoda Shipyards in Komarno and the CKD Shipyards in Liben, the CKD Design Department having been liquidated in the meantime. Evika (Evidencni kancelar vagonu - Office for Recording Railroad Cars) was originally a department of the Tatra concern but quickly grew far beyond the original purpose expressed in its title.

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During 1951 the Evika Ship Design Department became independent and was renamed Navika but its location remained the same. There was no change in its personnel or activities. Thus it was with Navika that the responsibility for the Soviet orders finally rested. Strajbl (see paragraph 2) was in charge of Navika. There were three chief designers for electric equipment, whose names were Ing. Mareda (fnu), Kohout (fnu), and Jedlicka (fnu), and six chief designers for machinery.

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4. The shipbuilding project was considered urgent and it was planned to begin delivery during 1951. The ships were to have diesel-electric drives, a capacity of about 400 passengers, and required about 20 crew members. The first order was for nine river ships. The following national enterprises participated in the production, supplying parts as mentioned:
- a. Skoda Shipyards in Komarno built the ships. They were built in the new section of the Komarno Shipyards which was opened apparently in connection with this Soviet order.
 - b. Navika firm designed the ship.
 - c. Skoda Works in Prague-Smichov provided:
 - (1) Main diesel engines of the 6L275 type, six cylinders, 400 hp at 550 rpm. There were two of these engines for each ship.
 - (2) Diesel engines, four cylinders, 100 hp at 1,500 rpm, for driving synchronous generators. There were two of these engines for each ship.
 - (3) Diesel engines, two cylinders, for charging batteries in cases of emergency. There was one of these engines for each ship.
 - (4) Diesel engines for air compressors, probably one for each ship.
 - d. Skoda Works in Hradec Kralove¹ supplied two propellers for each ship, propeller bearings, and propeller gaskets.
 - e. MEZ Vsetin supplied:
 - (1) Main drives which consisted of main generators of the MR 8092-10 type, marked 273 kw, 400 v, 550 rpm, and DC electric motors of the MR 8052-10 type, 250 kw, 490 v, 240 rpm, for driving propellers.
 - (2) Auxiliary machinery for the main drive which consisted of generator exciters, type MV 1311-4, and motor exciters, type M 1709. The latter were used for blowing air into the electric motors which drove the propellers.
 - (3) Generators, type M 2214, for charging the battery.
 - f. MEZ Frenstat (N 49-33, E 18-13) supplied synchronous generators, three-phase, 3 x 220 v, 50 cycles per second, for electric current for lighting and other common purposes. There were synchronous generators for each ship, each of which was driven by a diesel engine of about 100 hp.

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- g. MEZ Brno-Zidenice provided motor generator sets for rudder drives, output about five kilowatts, consisting of a DC generator, an induction motor, a motor exciter, and an amplidyne for exciting the generator.
 - h. MEZ Mohelnice (N 49-47, E 16-55) supplied all kinds of small induction motors such as winch motors for the anchor chains and emergency ventilating motors for the electric motors which drove the propeller.
 - i. MEZ Postrelmov (N 49-55, E 16-55) supplied panels and panel controls.
 - j. CKD Stalingrad in Prague-Vysocany supplied switches and controls.
 - k. Metra in Blansko (N 49-22, E 16-40) supplied instruments for measuring revolutions per minute of the generators and motors, and standard electric measuring instruments.
 - l. Sigma Pumps Factory in Lutin (P50/N74) or Olomouc or Napajedla (N 49-10, E 17-32) provided all of the water pumps. 25X1
 - m. Tesla supplied radio sending and receiving sets. 25X1
 - n. Signal Firm supplied signal and control equipment. 25X1
 - o. EZ (Elektromontazni zavody - a plant for the assembly and installation of electric equipment) in Bratislava, Komarno Branch, installed all of the main electric machinery and auxiliary equipment, including cables. the Komarno Branch later became an independent EZ enterprise. 25X1
 - p. Janka in Radotin (N 49-59, E 14-22) supplied various ventilators.
 - q. An enterprise supplied heating equipment--warm-water heating systems and boiler heating by diesel oil. 25X1
5. The drawings and blueprints for the ship were finished and sent to the USSR in 1950. The Soviets, however, did not fully approve the plans and requested changes in the external lines and internal space allocation of the ship. The changes did not affect the machinery. Making the changes in the blueprints and drawings necessitated postponing the date planned for beginning delivery until early 1952. (See page 8 for sketch of the ship as it was constructed.) 25X1
6. In the summer of 1951, MEZ Vsetin was urged to speed up delivery of machinery to the shipyards; however, the shipyards were not ready to use this machinery at that time but used the delay in delivery of machinery from MEZ Vsetin as an excuse for their own delay. MEZ Vsetin finally delivered the equipment in early 1952. It was planned to finish the building of the ship and to start testing it in the shipyards on 10 March 1952, to start testing the ship on the open water on 20 March 1952, and to schedule departure of the ship for 30 March 1952. It was also planned to display the ship in Moscow on 1 May 1952. 25X1
7. The construction of the ship was not completed as planned. The testing began on 2 April 1952 and the ship, "ROSSIYA", was finally handed over to Soviet representatives in Komarno in August 1952. The main reasons for delay in delivery were:
 - a. The electrical equipment was not designed according to the standards of the Soviet River Registry. MEZ Vsetin did not originally have the Soviet standards. They reached the plant when the design was

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almost finished and at that time they were disregarded. The necessary modifications of the machinery were made partly in the shipyards and partly after the ship had been delivered to the Soviet Union.

- b. The electric machinery was not properly tested at MEZ Vsetin and, therefore, defects appeared during the testing in the shipyards which could have been found and corrected in the factory.
 - c. The rudder drive was defective. It was very weak mechanically and had to be modified. Even after the modification, the rudder drive was not entirely satisfactory and it was still unsatisfactory when the tenth ship was built.
 - d. EZ in Komarno was not sufficiently staffed with qualified personnel for shipbuilding.
 - e. The Metra Blansko measuring instruments were not satisfactory.
8. In addition to the above-mentioned defects which were more or less corrected, the first ship had the following permanent defects which were never actually corrected:
- a. The ship was off balance when drawing a line from stem to stern at water level; one side was about 20 cm. wider than the other when measuring from the center of the ship.
 - b. The maximum speed of the ship in shallow water was 19.3 km. per hour. This speed was considered too low, although [redacted] no exact speed was stipulated in the order.
9. The second ship, 'UKRAINAYA', was handed over to the Soviet officials in December 1953, but the ship was not yet navigable at that time and did not actually leave the shipyards until January 1954. [redacted] The ninth ship, the last of the first series, was ready to leave the shipyards in April 1954 and was sent to the USSR sometime between May and the end of July.
10. The main characteristics of the machinery of the ships of the first series were as follows:
- a. The output of the diesel engine was 400 hp, as contracted, but only when the temperature in the engine room was 20° C or below. When the temperature exceeded 20° C the output decreased proportionately. The Soviets interrupted the testing of the ninth ship in April 1954 because of the diminishing output of the diesel engines and did not allow any testing of the ship whatsoever until they obtained a chart giving the relationship between the output of the engine and the temperature and air pressure in the engine room. They received a chart from the Skoda Works in Smichov within a week. Actually, it was possible to compile such a table in a couple of hours and it could have been done on the spot but, because the chart had to be signed by the chief engineer of the Skoda Works, it had to be prepared in Prague. This event contributed to the friction between the shipyard representatives and the Soviets which had existed from the beginning.
 - b. The engine room was very crowded, making the maintenance of machinery very difficult; the disassembly of generators was especially inconvenient.
 - c. The main electrical equipment was very complicated when designed and became even more complicated through modifications made during the first series:

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- (1) There were seven possibilities for combining the generators and the motors. Beginning with the sixth ship, the controls were located in the captain's bridge so that the captain could choose any combination he needed by moving the switches.
- (2) This equipment enabled the captain to change the direction of the propeller blades and thereby alter the course of the ship by simply moving two upright control levers back and forth, each regulating one propeller. A period of five seconds had to elapse while a lever was being moved in order to avoid a break in the circuit which would cause the propellers to cease operation. In order to insure the five-second delay after the levers were set into motion, a set of automatically timed relays was installed in the circuit beginning with the fifth ship. The relays were a CKD Stalingrad product and were individually good but proved unsatisfactory when installed in the ship's equipment.
- d. The design and manufacture of the main electrical equipment for the ships of the first series, especially for ships one through five, was unsatisfactory. Motor and generator armatures on some of the ships had to be replaced shortly after the ships were put into use and it was planned to replace the armatures on all of the ships. The armatures were made in MEZ Vsetin and were sent to the USSR to be installed in the machinery of the ships. 25X1
- e. The Metra Blansko measuring instruments were unsatisfactory. Metra Blansko asked for time to develop apparatus for electrical machinery for ships at the time the order was placed but was informed that, because of the lack of time, standard Metra apparatus would have to suffice. 25X1
- f. The auxiliary oil tank was poorly designed. It was placed above one of the diesel engines. One of the ships caught fire in a Soviet harbor; the fire started in the auxiliary oil tank.
11. The second series consisted of ships 10 through 35, all of which had the same technical features. Actually ships 10 through 35 were included on several separate orders. Most important changes in comparison to the first series were as follows:
 - a. The ventilator motors were of the TMN-16 type, a MEZ Zidenice product, and were fed by the propeller motor-exciter at a constant voltage of 220 v. The propeller motor-exciter was of the MR 2214 type, a MEZ Vsetin product, a larger type than the M 1709 propeller motor-exciter used in the first series. The first series was equipped with MU 1713 ventilator motors, a MEZ Vsetin product, fed by the generators at a voltage which varied up to 500 v.
 - b. The generator exciters were of the MRL 1610-4 type; this type being larger and having greater output than the MV 1311-4 type generator exciter used in the first series. Both were MEZ Vsetin products.
 - c. The blowing of air from the ventilator to the generator was improved during the course of the second series.
 - d. Beginning with the twentieth or twenty-fifth ship [redacted] equipment of the Buechi type for super-charging was to be employed with the diesel engines. This equipment would keep the output of the engine at 400 hp. even at a temperature higher than 20° C. 25X1 25X1

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12. The first ship of the second series, the tenth ship built, was handed over to the Soviets in August 1954. The delivery of the ship was delayed because of the late delivery of the electrical equipment from MEZ Vsetin to the shipyards. It had been planned to deliver this equipment in the autumn of 1953 but, because of thorough testing of the equipment in the factory, the delivery was delayed. In August 1954 the second, third, fourth, and fifth ships of the second series were near completion in the shipyards. In August 1954, MEZ Vsetin also delivered the equipment for the sixth and seventh ships of the series. The shipyards planned to deliver two ships each month. MEZ Vsetin was already delivering the equipment at that rate but the shipyards were not yet able to build ships at that rate. It was believed that the building of ships would continue indefinitely.

13. The third series was to begin with the thirty-sixth ship. Basic changes in machinery were to be made in the ships of this series. Smok went to Moscow in early 1954 to discuss new technical features. The basic changes included:

a. The same diesel engines with supercharging equipment as were used in the second series were to be used in the third series but the output was to be increased to 500 hp.

b. There was to be a mechanical transmission instead of the electric transmission. This meant that MEZ Vsetin would no longer participate in this shipbuilding project.

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the reasons were purely technical, i.e., although ships with electric transmission have the best possible navigability, such perfection is not necessary for river navigation; electric transmissions have larger power losses, about 80 hp in this case, than mechanical transmission, in which the loss is only about 20 hp; and, finally, electric machinery is more delicate and therefore more expensive to maintain.

c. The ships were to be wider at the water line, 10.5 m. instead of 8.6 m.

14. The Soviets dealing with the ships in the Skoda Shipyards in Komarno were either employees of the Soviet River Registry Bureau or representatives of the Soviet Ministry of the River Fleet. The River Registry Bureau had its office at the shipyards and employed five to 10 people. The office was subordinate to the River Registry Bureau in Prague, chief of which was Polyakov (fnu). Kharitonov (fnu) was head of the Komarno office. The task of the River Registry Bureau was to keep a constant check on the building of the ships in the shipyards and insure compliance with Soviet standards of river navigation. The ships were the property of the shipyards until they were officially turned over to the Soviets; however, an authorization from the River Registry Bureau was necessary for making each test on open water. An official from the River Registry Bureau went to MEZ Vsetin to check the equipment when it was ready to leave the factory.

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representatives of the Soviet Ministry of the River Fleet were located in Komarno in order better to control Soviet shipping on the Danube River. In addition to this function, they also represented the USSR in purchasing ships built in the Czechoslovak shipyards and destined for the USSR. One of these representatives was present in the shipyards during the building of the ships of the first series. The captain and chief engineer were also present while the ship on which they were to serve was being built.

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15. The Czechoslovak Ministry of Machinery Construction had representatives in the shipyards whose task it was to handle coordination among the individual enterprises participating in the building of the ships. Prior to the setting up of the Ministry of Machinery Construction, these officials were in the shipyards as representatives of the Ministry

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of General Machinery Construction and of the Ministry of Heavy Machinery Construction which existed at that time.

16. In general, this shipbuilding project was not properly planned and organized. The quality of the ships of the second series should have been better than that of the first series, and the ships with mechanical transmissions, those of the third series, should have been better than those with electric transmissions.

1 Comment: The Skoda Works in Hradec Kralove produced mainly equipment for sugar refineries and distilleries and similar industrial equipment and had no connection with the Ship Design Department. This department was located in Hradec Kralove only because there was adequate building space for it at this branch of the Skoda Works. In addition to this installation there was one other ship design department in Czechoslovakia; the CKD National Enterprise had a Ship Design Department located in Prague (probably Karlin) and shipyards located in Prague-Liben.

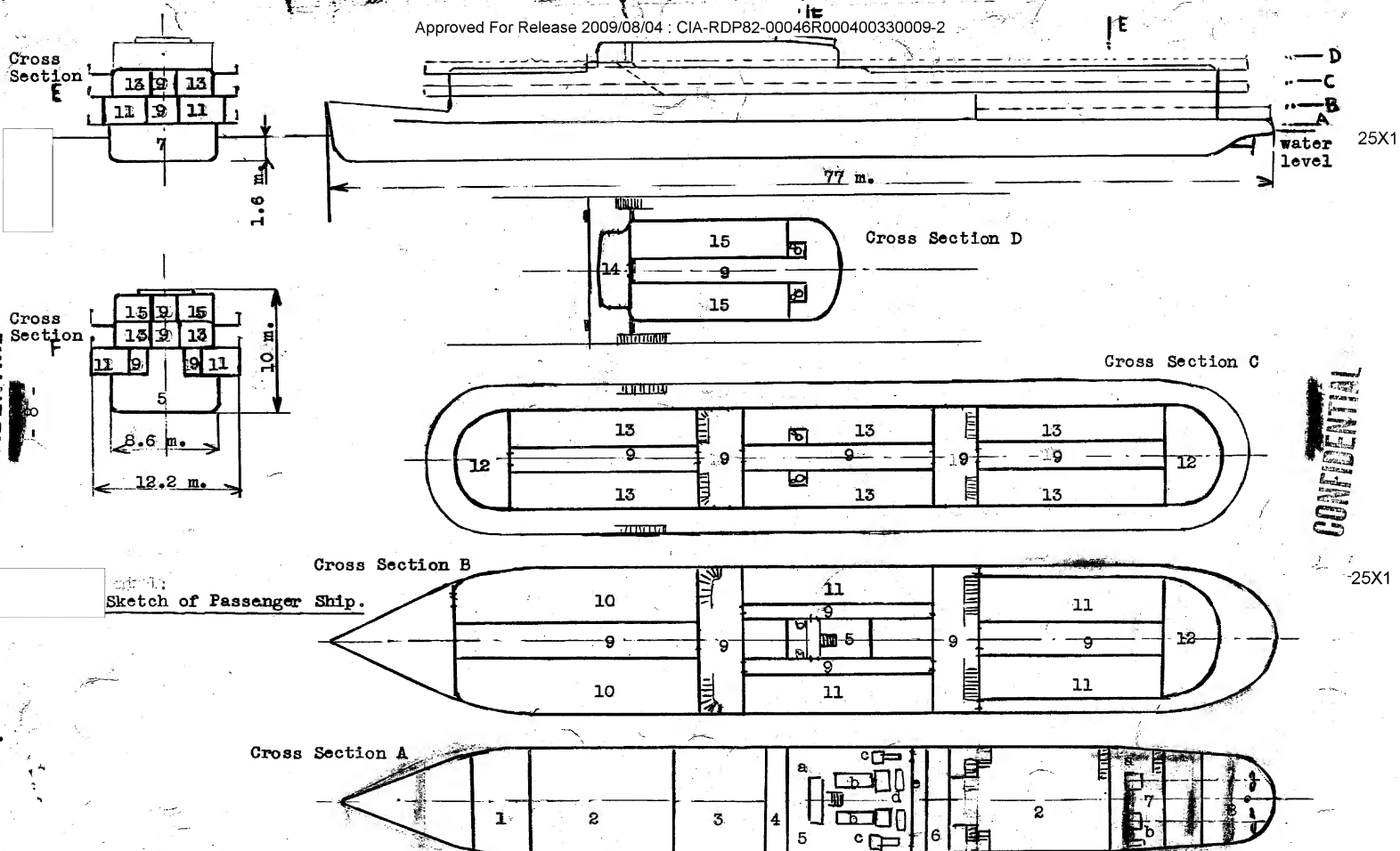
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Legend (See Sketch, page 8)

1. Cabins for crew.
2. Third-class passenger cabins; capacity 200 persons.
3. Cargo storage.
4. Diesel oil tanks and water tanks.
5. Main engine room:
 - a. Boiler for heating ship.
 - b. Main diesel engines.
 - c. Diesel engines for driving synchronous generators.
 - d. Panel control.
 - e. Panel.
6. Diesel oil tanks and water tanks.
7. Rear engine room:
 - a. Electric motor for driving propellers.
 - b. Motor generator set for driving rudder.
8. Rudder drive.
9. Gangways.
10. Second-class passenger cabins; total capacity about 180 persons.
11. Sitting rooms and offices.
12. Mess.
13. First and second-class passenger cabins.
14. Pilot's room.
15. Captain's cabin and two or three luxury cabins.

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